



614 Magnolia Avenue Ocean Springs, MS 39564 Phone 228.818.9626 Fax 228.818.9631

DRAFT MEMORANDUM

To: Valmichael Leos **Date:** October 15, 2010

U.S. Environmental Protection Agency

From: David Keith, Anchor QEA, LLC

Jennifer Sampson, Integral Consulting, Inc.

Cc: Jay Roberts, Big Star Barge and Boat Company, Inc.

March Smith and Andrew Shafer, McGinnes Industrial Maintenance Corporation

Philip Slowiak, International Paper Company

Re: Draft Addendum to the Removal Action Work Plan (RAWP) for the Time Critical

Removal Action (TCRA), San Jacinto River Waste Pits Superfund Site

INTRODUCTION

This memorandum has been prepared as an addendum to the Removal Action Work Plan (RAWP) for implementing a Time Critical Removal Action (TCRA) at the San Jacinto River Waste Pits (SJRWP) Superfund Site (Site) (Anchor QEA 2010a), on behalf of International Paper Company (IPC) and McGinnes Industrial Maintenance Corporation (MIMC) (Respondents). The RAWP was prepared under Administrative Order on Consent (AOC) with the U.S. Environmental Protection Agency (USEPA), Docket No. 06-03-10, April, 2010 (USEPA 2010a).

Respondents are currently engaged in efforts to obtain access to portions of the Big Star Boat & Barge Company property (Big Star Property) for use as a staging and laydown area. To minimize any delay in utilizing the Big Star Property for such purposes (and assuming that access rights can be obtained), Respondents have prepared and are seeking USEPA approval of this addendum. Respondents are doing so in light of their understanding that such sampling will need to be completed in connection with USEPA approval of the use of the Big Star Property for such purposes.

The RAWP presents engineering design and specifications for the TCRA. This addendum describes soil sampling at the location identified by the Respondents for the staging and

laydown area required for the work proposed by the RAWP, and the chemical analyses of soil samples. This addendum includes the objectives for soil sampling to be conducted, and describes the specific locations to be sampled, the depth of samples, the soil analytes, and sampling and analysis methods. It also identifies the quality assurance/quality control (QA/QC) procedures to be applied. The sampling described by this addendum to the RAWP is a component of the scope of the work to be performed under the AOC, and will be conducted according to objectives articulated by the USEPA in response to their review of the draft RAWP.

STATEMENT OF THE PROBLEM

The RAWP describes a process to prepare for performance of the TCRA that requires the use of several parcels owned by the Big Star Barge & Boat Company (Big Star) for contractor access, equipment laydown, and material stockpiling (Proposed Laydown/Storage Area). There are no data available for soils in the Proposed Laydown/Storage Area to determine whether chemicals of potential concern (COPCs) are present. Data on the concentrations of COPCs in soil in the Proposed Laydown/Storage Area are needed to address this data gap.

ANALYSIS OF EXISTING INFORMATION AND SELECTION OF SOIL ANALYTES

Available data for soil and sediment at the Site were evaluated to identify the appropriate chemical analytes for soils in the Proposed Laydown/Storage Area. Appendix C of the Remedial Investigation/Feasibility Study (RI/FS) Work Plan (Anchor QEA and Integral 2010) describes the process for selection of COPCs at the Site, documents the steps of the analysis, and lists both primary and secondary COPCs that result. Primary COPCs are those that were detected at least once in sediments collected in 2006 from within the waste impoundments, and were either bioaccumulative, or exceeded conservative screening criteria for human and ecological receptors, or both. Secondary COPCs are those that were never detected in sediments from within the waste impoundments, but could be there because they may be associated with pulp mill wastes in general. Each primary and secondary COPC was determined to be of potential concern to human or ecological receptors.

For the analysis described in this section, available data for the primary COPCs for human health in soil and sediment were evaluated to identify the most appropriate and relevant analytes for soil collected from the Proposed Laydown/Storage Area. Polychlorinated

biphenyls (PCBs), defined as a secondary COPC for human health, were also considered in detail. Secondary COPCs other than PCBs were generally not detected in soils and sediments, had relatively low detection frequencies, or were detected at very low levels in soil (Anchor QEA 2010b) and sediments. Therefore, secondary COPCs (other than PCBs) are not considered further, because they are unlikely to be risk drivers in soils in the Proposed Laydown/Storage Area.

The following information was considered in determining the analytes for soil samples from the Proposed Laydown/Storage Area; this information is summarized in Table 1:

- Regional Screening Levels (RSLs). Screening level values used to evaluate existing soil and sediment data were the RSLs presented by USEPA (USEPA 2010b). These RSLs correspond to a non-cancer hazard quotient of 1 following cumulative exposures by an industrial/commercial worker due to inhalation, ingestion, and dermal contact for each chemical individually over a 25-year period. Exposure of TCRA workers to soils in the laydown area will be for less than one year. Given the conservative assumptions built in to the screening values, and the relatively short period of exposure anticipated at the Proposed Laydown/Storage Area, the RSLs for non-cancer endpoints were considered sufficiently conservative for the purposes of identification of analytes in soils to be collected from the Proposed Laydown/Storage Area.
- **Primary COPCs in Sediment.** The maximum concentration of each primary COPC (other than dioxins and furans) in surface sediment sampled in 2010 for the RI was compared to the industrial/commercial RSL for that chemical.
 - Result: None of the primary COPCs in sediment exceeded their RSL for industrial/commercial workers (Table 1).
- Primary COPCs in Soil from the Texas Department of Transportation (TxDOT) Right-of-Way (ROW). The maximum concentration of each of the primary COPCs in soil collected in the TxDOT ROW (other than dioxins and furans) was compared to the corresponding RSL.
 - Result: None of the primary COPCs for human health in soil from the TxDOT ROW exceed the RSLs for industrial/commercial workers (Table 1).
- PCBs in Sediment and Soils. Dioxin-like PCB congeners were analyzed in soil from the TxDOT ROW, and in surface sediments collected for the RI in 2010. USEPA (2010b) does not provide non-cancer RSLs for individual PCB congeners. Therefore, the cancer-risk-based industrial/commercial RSLs for individual dioxin-like PCB

congeners were compared to the maximum concentration of the individual congener in TxDOT ROW soils, and the maximum in RI sediments.

- In soils, all dioxin-like PCB congeners were below the cancer-risk-based screening values.
- In surface sediment, the maximum concentration of three congeners exceeded the cancer-risk-based screen: PCB 114, PCB 118, and PCB 126, by factors of 3.4 (one station), 1.8 (one station), and 3 (one station, non-detect), respectively. PCB 126 was detected at one sediment station, with an estimated value below the RSL.
- Result: Given the conservatism of the screening values, the conservatism of representing soils using sediment data, the low frequency and degree of exceedance in sediments, and that the exceedance for PCB 126 was a non-detect, PCBs are not considered to be a likely risk driver for the TCRA worker exposed to COPCs in soil in the Proposed Laydown/Storage Area.

This screening analysis indicates that, other than dioxins and furans, primary COPCs and PCBs are very likely not risk drivers for the TCRA worker exposed to soils in the Proposed Laydown/Storage Area. Therefore, analytes for soil collected from the Proposed Laydown/Storage Area will be the dioxin and furan congeners listed in Table 2 of the draft Sampling and Analysis Plan (SAP): Soil Study (Integral 2010a). Total organic carbon (TOC) will also be analyzed. No additional analytes will be included in this study.

PROJECT ORGANIZATION, METHODS, AND QUALITY ASSURANCE PROCEDURES

Soil sampling and analyses described in this addendum will be conducted in full conformance with the draft Soil SAP (Integral 2010a) and related appendices (including the Field Sampling Plan, which is Appendix A to the Soil SAP), except for the objectives, additional sampling locations, limited analyte list, and different sample depths described in this addendum. The draft Soil SAP describes the means to achieve all QA/QC requirements and documentation articulated by USEPA's guidance for preparation of quality assurance project plans, and field sampling plans (USEPA 1998, 2001); these specifications will be applied to the collection, analysis, QA review, data management, and reporting of the information generated as described in the addendum.

DATA QUALITY OBJECTIVES

This section provides a summary of the data quality objectives for the proposed soil sampling, inclusive of the objective of the task, analytical approach, and sampling locations.

Sampling Objective

Soil sampling will be conducted in the Proposed Laydown/Storage Area, and soils will be analyzed for dioxins and furans and TOC to provide information necessary to obtain access for purposes of the TCRA and to otherwise prepare for performance of the TCRA.

Analytical Approach

Additional soil sampling (Figure 1) must be conducted in the Proposed Laydown/Storage Area in order for Respondents to obtain approval to use the Area in connection with the TCRA and to support a decision about the final location of the areas to be used for purposes of equipment laydown and storage. The only COPCs proposed for analysis are dioxins and furans because available evidence suggests that other COPCs are not present at concentrations in sediments and soils from the Site at levels of concern for a temporary commercial/industrial worker. Therefore, the sampling and analytical approach to be used, and decisions that will be made using the soil chemistry data from the proposed laydown area, are as follows:

- Respondents will collect soil from 13 stations in the Proposed Laydown/Storage Area
 (Figure 1) as soon as possible, following the USEPA approval of this addendum and
 after the necessary access agreement with Big Star has been reached.
- Concentrations of dioxins and furans, expressed as the toxicity equivalent (TEQ) concentration (calculated using mammalian toxicity equivalency factors [TEFs] of van den Berg et al. [2006] and assuming non-detects are present at one-half their detection limit) at each individual station will be compared to the reference envelope value for soil (the reference envelope value is described in Section 1.8.3.3 of the Tissue SAP; Integral 2010b). The reference envelope value will be calculated using results from soil sampling conducted by Texas Commission on Environmental Quality (TCEQ) for the Total Maximum Daily Load (TMDL) program (University of Houston and Parsons 2006), and summarized in Table 1 of the draft Soil SAP (Integral 2010a).
- If a majority of the soil stations have a TEQ value equal to or below the reference envelope value, then no further analysis will be conducted, and the Proposed

Laydown/Storage Area will be used as described in the RAWP (provided that and assuming that Respondents can obtain access rights to it).

If concentrations of dioxins and furans, as the TEQ, at a majority of individual stations are greater than the reference envelope value for upstream sediments, then the respondents will work with EPA to develop an appropriate soil screening number(s) to evaluate if there is a potential for unacceptable exposure and/or risks to industrial workers that may come into contact with the soils during implementation of the TCRA. The TEQs for individual soil samples collected from within the Proposed Laydown/Storage Area will be used to calculate a reasonable maximum exposure (RME) concentration. ProUCL software will be used to compute this value, and the statistic used will be the one deemed most appropriate to the data. The RME concentration in soil at the Proposed Laydown/Storage Area will be compared to the soil screening number.

If the RME exceeds the soil screening number, Respondents will discuss the appropriate measures with USEPA. If the RME does not exceed this value, no further analysis will be conducted, and the Proposed Laydown/Storage Area generally described by the RAWP will be used for TCRA construction.

Sample Locations and Depth

Within the Proposed Laydown/Storage Area, 13 samples will be collected at locations shown in Figure 1. Geographic coordinates of each sample location and station numbers are provided in Table 2. Samples will be collected from 0 to 12 inches (0 - 30 cm) depth, and the full depth interval will be homogenized prior to removing aliquots for each analysis, as described in Section 2.1.3 of Appendix A to the draft Soil SAP (Integral 2010a). While the samples have been located to avoid crushed concrete and other debris, these types of materials, and gross vegetation, will be removed from the sample prior to homogenization, and any such removals will be documented in the field log, as described in Section 2.1.3 of Appendix A to the draft Soil SAP.

Timing of Sampling and Reporting

Samples will be collected within 15 days of USEPA approval of this addendum, assuming that the necessary access agreement can be obtained that will permit the samples to be collected

within that time period. Chemical analyses will be requested from the laboratory on an accelerated turn-around time. Unvalidated data are expected to be available within four weeks of sampling, and validated data will be available electronically within five weeks of sampling. A data report will be presented to USEPA within six weeks of the sampling event.

SAMPLE COLLECTION MATRIX

Table 3 provides a checklist of samples for use in the field during sampling. It is analogous to Table A-3 in Appendix A of the draft Soil SAP.

REFERENCES

- Anchor QEA, 2010a. Draft Removal Action Work Plan San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Anchor QEA, Ocean Springs, MS.
- Anchor QEA, 2010b. Draft TXDOT Right-of-Way Data Report. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Anchor QEA, Ocean Springs, MS.
- Integral, 2010a. Draft Sampling and Analysis Plan: Soil Study. San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Integral Consulting Inc., Seattle, WA.
- Integral, 2010b. Sampling and Analysis Plan: Tissue Study. San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency, Region 6. Integral Consulting Inc., Seattle, WA.
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- University of Houston and Parsons, 2006. Total Maximum Daily Loads for Dioxins in the Houston Ship Channel. Contract No. 582-6-70860, Work Order No. 582-6-70860-02. Quarterly report No. 3. Prepared in cooperation with the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency. University of Houston and Parsons Water & Infrastructure. Available at:

 http://www.tceq.state.tx.us/assets/public/implementation/water/tmdl/26hscdioxin/26-all-data-compiled-q3-fv06.pdf.

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- USEPA, 2001. EPA Requirements for Quality Assurance Project Plans. EPA QA/R-5. EPA/240/B-01/003. U.S. Environmental Protection Agency, Office of Environmental Information, Washington, DC.
- USEPA, 2009. Draft Recommended Interim Preliminary Remediation Goals for Dioxin in Soil at CERCLA and RCRA Sites. OSWER 9200.3-56. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation, Washington, DC.
- USEPA, 2010a. Administrative Settlement Agreement and Order on Consent for Removal Action. USEPA Region 6 CERCLA Docket No. 06-03-10. In the matter of: San Jacinto Waste Pits Superfund Site Pasadena, Harris County, Texas. International Paper Company, Inc. & McGinnes Industrial Management Corporation, respondents.
- USEPA, 2010b. Regional Screening Levels. United States Environmental Protection Agency. Last updated May 2010. Available at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration-table/Generic Tables/index.htm.

Table 1
Soil and Sediment Screening for Primary COPCs

			Surface Sediment ^b		Soil ^c			
		USEPA RSL for	Maximum		Does Maximum	Maximum		Does Maximum
	USEPA RSL for Industrial	Industrial Soil	Concentration	Frequency of	Concentration	Concentration	Frequency of	Concentration
	Soil (Non-cancer) ^a	(Cancer) ^a	Measured ^d	Detection	Exceed RSL? d	Measured	Detection	Exceed RSL? ^e
Metals (mg/kg)								
Arsenic	260		7.73	115/115	No	3.9	14/14	No
Cadmium	800		1.6	72/115	No	0.44 J	12/14	No
Chromium ^f	3,100		35.7	114/115	No	61.7	14/14	No
Copper	41,000		110	102/115	No	39.5	14/14	No
Mercury	310		2.83	109/115	No	0.081	14/14	No
Nickel	20,000		17.8	109/115	No	11.9	14/14	No
Zinc	310,000		305	115/115	No	188	14/14	No
Polychlorinated Biphenyls (μg/kg)								
PCB 77	NV	110	2.58	12/24	No	0.13 J	11/14	No
PCB 81	NV	110	0.128 U	5/24	No	0.004 J	3/14	No
PCB 105	NV	110	76.6	20/24	No	4.3	12/14	No
PCB 114	NV	2.3	7.75	12/24	Yes	0.25 J	9/14	No
PCB 118	NV	110	197	19/24	Yes	10.5	12/14	No
PCB 123	NV	110	4.21	12/24	No	0.15 J	9/14	No
PCB 126	NV	0.11	0.320 U	1/24	Yes ^g	0.025 J	6/14	No
PCB 156	NV	23	51.4	19/24	No ^h	1.8	12/14	No ^h
PCB 157	NV	23	51.4					
PCB 167	NV	1,100	14.9	15/24	No	0.52 J	11/14	No
PCB 169	NV	1.1	0.0403 U	0/24	No	0.0095 J	3/14	No
PCB 189	NV	110	1.7	10/24	No	0.11 J	10/14	No
Semivolatile Organic Compounds (μg/kg)								
Bis(2-ethylhexyl)phthalate	12,000,000		3,000	34/115	No	140 J	13/14	No

Notes

'-- = not applicable RSL = regional screening level

COPC = chemical of potential concern U = undetected

J = estimated USEPA = U.S. Enivronmental Protection Agency

NV = no value available

- a USEPA Regional Screening Levels are available at: http://www.epa.gov/reg3hwmd/risk/human/index.htm.
- b- Surface sediment samples collected in 2010 for the Remedial Investigation
- c- Soil samples collected in the TxDOT ROW in 2010.
- d Non-detected values are included as the detection limit
- e- Comparisons were made against the RSL based on a non-cancer endpoint where available. If a non-cancer RSL was not available, comparisons were made to the cancer risk based RSL.
- f Screening value is for Chromium VI
- g The exceedance is by a detection limit. Lower concentrations were detected below the screening value.
- h Analytical data is for co-eluted PCB congeners, assuming additive toxicity does not exceed RSL.

Table 2
Station Coordinates, Sample Type, Sampling Interval, and Corresponding Analysis

Station				Coordinates ^a	
Number	Sample Type	Sampling Intervals	Analysis	Х	Υ
SJTS001	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215201.198	13858426.43
SJTS002	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215639.487	13858346.59
SJTS003	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215787.44	13858414.14
SJTS004	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215201.198	13858276.43
SJTS005	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215522.239	13858274.38
SJTS006	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215639.487	13858196.59
SJTS007	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215787.44	13858264.14
SJTS008	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215201.198	13858126.43
SJTS009	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215522.239	13858124.38
SJTS010	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215639.487	13858046.59
SJTS011	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215787.44	13858114.14
SJTS012	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215201.198	13857976.43
SJTS013	Surface soil	0-30 cm (0-12 inches)	Dioxins and Furans, TOC (0-30 cm interval)	3215522.239	13857974.38

Notes

COPC = chemical of potential concern

TBD = to be determined

TOC = total organic carbon

a - NAD 1983; State Plane Texas South Central FIPS 4204; US feet

Table 3
Field Sample Collection Matrix

					Soil Samp	Blank Filter Wipes (Whatman Grade 42 filters)			
							District and France		
					TOC	Dioxins and Furans	Dioxins and Furans		
Station Number	Sample Identifier	Sample Number	Sample Depth	Sample Type	8 oz WMG ^a 4±2 ºC	8 oz WMG ^a 4±2 °C/ Deep frozen (-20°C) ^b /-10 °C	4 oz WMG ^a 4±2ºC		
	Proposed Laydown Area								
SJTS001	SJT001-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS002	SJTS002-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS003	SJTS003-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS004	SJTS004-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS005	SJTS005-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS006	SJTS006-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS007	SJTS07-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS008	SJTS008-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS009	SJTS009-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
	SJTS009-A-DUP	SL	0-12 inch (0-30 cm)	Field Split	Tag #	Tag #	NA		
FW Blank	SJTSFW-xxxC	FW	Surface Sampling Equipment	Equipment filter wipe blank	NA	NA	Tag #		
SJTS010	SJTS010-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS011	SJTS011-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJTS012	SJTS012-A	SL	0-12 inch (0-30 cm)	Normal	Tag #	Tag #	NA		
SJSS013	SJSS013-A	SL		Normal	Tag #	Tag #	NA		
Filter Blank	SSFW-xxC	FW	Surface Sampling Equipment	Filter blank	NA	NA	Tag #		

Definitions

NA = not applicable

WMG = wide mouth glass

 $\ensuremath{\mathrm{a}}$ - The size and number of containers may be modified by the analytical laboratory.





Scale in Feet



Figure 1
Soil Sample Locations
RAWP Addendum
SJRWP Superfund/MIMC and IPC